UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/803,168	03/09/2001	Kiyokuni Kawachiya	JP919990286US1	4740

		EXAMINER

7590   10/27/2003

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ART UNIT	PAPER NUMBER
2126	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application N .		Applicant(s)
	09/803,168		KAWACHIYA ET AL.
Office Action Summary	Examiner		Art Unit
	Phuong N. Hoang		2126

-- The MAILING DATE of this c mmunication appears on the cover sheet with the correspondence address --

Peri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 March 2001</u> .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1 - 10</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1 - 10</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>09 March 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5)☐ Notice of Informal Patent Application (PTO-152)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6)☐ Other: .

DETAILED ACTION

Oath/Declaration

The signatures of the inventors are missing.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3, 4, 5, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The object can be accessed by another object.

The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to adequately teach the claimed limitations "first subprocess", "second subprocess", "third subprocess", and "forth subprocess" as recited in claim 9, and "first subprocess", "second subprocess", and "third subprocess" in claim 10.

Claims 9, 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants recite the limitations "first subprocess", "second subprocess", "third subprocess", and "forth subprocess" as cited in claims 9, and "first subprocess", "second subprocess", and "third subprocess" in claim 10. There does not appear to be a written description of the claimed limitation in the application as filed, for the reasons set forth in the object to the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 8 recites the limitation "flag data". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Claims 1 is rejected under 35 U.S.C. 102(e) as being unpatentable by Holzle, US patent no. 6,209,066.

As to claim 1, Holzle teaches a computer system having a data processing environment, in which a program is divided into and executed as multiple threads,

and in which the threads share and access data that is stored in a memory device,

comprising:

a)   means for indicating specific data that will be accessed only by a specific

thread (thread 306a col. 7 line 65 – col. 8 line 5);

b)   means for determining, when a thread attempts to access data, whether a

specific thread indication is present relative to the data being accessed (private blocks

304b,d,f, col. 8 lines 1 – 5);

c)   means for accessing the specific data without first performing a locking

process to reject access attempts by other threads (threads with a private block may

use a non-locking, fast-allocation routine, col. 9 lines 1 – 20), when the specific thread

indication is present (when a thread is assigned a private block, col. 9 lines 1 – 20);

d)   means for performing a locking process for the data being accessed

before accessing the data when it is determined that no specific (when a thread is

assigned a shared block, col. 9 lines 1 – 20), thread indication is present (when a thread

is assigned a shared block, col. 9 lines 1 – 20).

Claims 3, 4, 6, 7, 9, are rejected under 35 U.S.C. 102(a) as being

unpatentable by Steele, US patent no. 5,862,376.

As to claim 3, Steele teaches:

a)   flag data, provided for an object for indicating an existence of a locality

specifying that the object is to be accessed only by a specific thread (lock bit 226 is set

to the "true" state (i.e., lock bit = 1), the object is currently synchronized with a particular

thread that has exclusive use (or sole access) to the object, col. 5 lines 35 – 65);

b)   means for having the specific thread access the object when the flag data

for the object indicates the locality for the specific thread, without performing a locking

process to reject access attempts by other threads or other objects before accessing

the specific data (each thread of execution can execute a number of methods where

each method can require synchronization to a particular object. It is often the case that

each of the methods of a particular thread are not award of the locks obtained by the

other methods, col. 4 lines 24 – 30).

c)   means for having the specific thread perform the locking process before

accessing the object (thread T-01 that has made a series of lock requests, col. 6 lines

15 – 20) when the flag data does not indicate the locality for the specific thread (lock bit

= 0 indicates that the object is not synchronized with a particular thread, col. 5 lines 55 –

60).

As to claim 4, Steele teaches the computer system according to claim 3,

wherein, when the object is created by a thread (each thread of execution can execute

a number of methods where each method can require synchronization to a particular

object, col. 4 lines 24 – 28), the object sets the flag data indicating a locality exists for

the thread (lock bit = 1, col. 5 lines 50 – 60), and wherein, before the is changed so that

it can be accessed by another thread, the locality indicated by the flag data is cancelled

(lock bit = 0, col. 5 lines 50 – 60 and col. 6 lines 15 - 25).

As to claim 6, see claims 3, and claim 4 for object sets the flag.

As to claim 7, Steele teaches performing the locking process (lock requests, col. 6 lines 15 – 20), when the specific object has a locality for a specific thread (inherent), that was skipped at the time the specific object was access by the specific thread (a particular thread are not aware of the locks, col. 4 lines 25 – 30 and lines 65 – 67).

As to claim 9, see claim 6 accept for four subprocesses, each perform each function. Steele teaches four subprocesses, each performs each function (Steele's system is a multiprocessor computer system on which threads running in parallel on the processors, col. 1 lines 12 – 25).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holzle, US patent no. 6,209,066 in view of Adcock, US patent no. 5,652,883.

As to claim 2, Holzle does not teach specific thread detects data and the specific thread does not have a reference pointer to the data, and release memory to provide free storage.

Adcock teaches thread detects data, and the specific thread does not have a reference pointer to the data (objects 121, 125, 126, 127, and 128 are inaccessible because there are no pointers to these objects, col. 3 lines 20 – 25 and col. 1 lines 60 -

65), and release memory to provide free storage (the garbage collector knows whether a memory contains a pointer, does not contain a pointer,..... the inaccessible objects 121, 124 – 128 have been deallocated into free spaces, col. 3 lines 20 – 35).

It would have been obvious to apply the teaching of Adcock to Holzle's system because the system can keep track of which object is not accessible and clean up to save the memory storage when not being used.

Claims 5, 8, 10, are rejected under 35 U.S.C. 102(a) as being unpatentable by Steele, US patent no. 5,862,376 and in view of Adcock, US patent no. 5,652,883.

As to claim 5, Steele teaches the specific thread detects an object for which the flag data indicates the existence of a specific thread (lock bit = 1, col. 5 lines 50 – 60). Steele does not teach if the thread does not have a reference pointer to the data, therefore release the object to provide memory storage.

Adcock teaches the specific thread does not have a reference pointer to the data (objects 121, 125, 126, 127, and 128 are inaccessible because there are no pointers to these objects, col. 3 lines 20 – 25 and col. 1 lines 60 - 65), and release memory to provide free storage (the garbage collector knows whether a memory contains a pointer, does not contain a pointer,..... the inaccessible objects 121, 124 – 128 have been deallocated into free spaces, col. 3 lines 20 – 35).

It would have been obvious to apply the teaching of Adcock to Holzle's system because the system can keep track of which object is not accessible and clean up to save the memory storage when not being used.

As to claim 8, see claim 3 for flag data, and claim 5.

As to claim 10, see claim 8 above accept for subprocesses, each perform each function. Steele teaches three subprocesses, each performs a function (Steele's system is a multiprocessor computer system on which threads running in parallel on the processors, col. 1 lines 12 – 25).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong N. Hoang whose telephone number is (703) 605-4239. The examiner can normally be reached on Monday - Friday 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (703) 305-8498. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)746-7140.

Ph

October 6, 2003.

JOHN FOLLANSBEE
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